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§ 160.076-21 Component materials.

(a) Each component material used in the manufacturer of an inflatable PFD must—

(1) Meet the applicable requirements of subpart 164.019 of this chapter, UL 1191, UL 1180, and this section; and

(2) Be of good quality and suitable for the purpose intended.

(b) The average permeability of inflation chamber material, determined in accordance with the procedures specified in § 160.076-25(d)(2)(iii) must not be more than 110% of the permeability of the materials determined in approval testing required by § 160.076-25(d)(2)(iii).

(c) The average grab breaking strength and tear strength of the inflation chamber material, determined in accordance with the procedures specified in §§ 160.076-25(d)(2)(i) and 160.076-25(d)(2)(ii), must be at least 90% of the grab breaking strength and tear strength determined from testing required by §§ 160.076-25(d)(2)(i) and 160.076-25(d)(2)(ii). No individual sample result for breaking strength or tear strength may be more than 20% below the results obtained in approval testing.

(d) Each manual, automatic, or manual-auto inflation mechanism must be marked in accordance with § 160.076-39(e).

[CGD 94-110, 60 FR 32848, June 23, 1995, as amended by CGD 94-110, 61 FR 13946, Mar. 28, 1996]

§ 160.076-23 Construction and performance requirements.

(a) Each inflatable PFD design must—

(1) Meet the requirements in UL 1180 applicable to the PFD performance type for which approval is sought; and

(2) Meet any additional requirements that the Commandant may prescribe to approve unique or novel designs.

(b) [Reserved]

[CGD 94-110, 60 FR 32848, June 23, 1995, as amended by CGD 94-110, 61 FR 13946, Mar. 28, 1996]

§ 160.076-25 Approval testing.

(a) To obtain approval of an inflatable PFD design, approval tests specified in UL 1180 and this section must be conducted or supervised by a recognized laboratory using PFDs that have been constructed in accordance with the plans and specifications submitted with the application for approval.

(b) Each PFD design must pass the tests required by UL 1180 and this section that are applicable to the PFD performance type for which approval is sought.

(c) Each test subject participating in the tests in UL 1180, section 6 shall in addition, demonstrate that the test subject can repack the PFD such that it can be used in the donning tests and manual activation tests required by—

(1) Section 6.2.3 of UL 1180; and

(2) Sections 6.4.1, and 6.4.2 of UL 1180, if the test engineer cannot verify that the manual and oral inflators are properly stowed.

(d) Each PFD design must pass the following tests and evaluations:

(1) *Visual examination.* The complete PFD must be visually examined for compliance with the construction and performance requirements of §§ 160.076-21 and 160.076-23 and UL 1180 and 1191.

(2) *Inflation chamber properties.* The following tests must be conducted after successful completion of all other approval tests. The test samples used in the following tests must come from one or more PFDs that were each used in all the Use Characteristics Tests required by UL 1180 section 6.

(i) *Grab breaking strength.* The grab breaking strength of chamber materials must be determined in accordance with Method No. 5100 of Federal Test Method Standard 191 or ASTM D 751.

(ii) *Tear strength.* The tear strength of chamber materials must be determined in accordance with Method No. 5132 or 5134 of Federal Test Method Standard 191 or ASTM D 751.

(iii) *Permeability.* The permeability of chamber materials must be determined in accordance with ASTM D 1434 using CO₂ as the test gas.

(iv) *Seam strength.* The seam strength of the seams in each inflation chamber of at least one PFD must be determined in accordance with ASTM D 751 except that 25 by 200 mm (1 by 8 in.)

samples may be used where insufficient length of straight seam is available.

(e) *Additional tests.* The Commandant may prescribe additional tests for approval of novel or unique designs.

[CGD 94-110, 60 FR 32848, June 23, 1995, as amended by CGD 94-110, 61 FR 13946, Mar. 28, 1996]

§ 160.076-27 [Reserved]

§ 160.076-29 Production oversight.

(a) Production tests and inspections must be conducted in accordance with this section and subpart 159.007 of this chapter unless the Commandant authorizes alternative tests and inspections. The Commandant may prescribe additional production tests and inspections necessary to maintain quality control and to monitor compliance with the requirements of this subpart.

(b) Production oversight must be performed by the same laboratory that performs the approval tests unless the Commandant determines that the employees of an alternative laboratory have received training and have access to the same information as the inspectors of the laboratory that conducted the approval testing.

(c) In addition to responsibilities set out in part 159 of this chapter and the accepted Laboratory Follow-up Procedures, each manufacturer of an inflatable PFD and each recognized laboratory inspector shall comply with the following, as applicable:

(1) *Manufacturer.* Each manufacturer must—

(i) Except as provided in paragraph (e)(2) of this section, perform all required tests and examinations on each PFD lot before any required inspector's tests and inspection of the lot;

(ii) Follow established procedures for maintaining quality control of the materials used, manufacturing operations, and the finished product;

(iii) Implement a continuing program of employee training and a program for maintaining production and test equipment;

(iv) Admit the inspector to any place in the factory where work is done on PFDs or component materials, and where parts or completed PFDs are stored;

(v) Have an inspector observe the production methods used in producing the first PFD lot and observe any revisions in production methods made thereafter; and

(vi) Allow the inspector to take samples of completed PFDs or of component materials for tests required by this subpart and for tests relating to the safety of the design.

(2) *Recognized laboratory oversight.* An inspector from a recognized laboratory shall oversee production in accordance with the MOU. During production oversight, the inspector shall not perform or supervise any production test or inspection unless—

(i) The manufacturer has a valid approval certificate; and

(ii) The inspector has first observed the manufacturer's production methods and any revisions to those methods.

(3) The inspector must perform or supervise testing and inspection of at least one in each five lots of PFDs produced.

(4) During each inspection, the inspector must check for compliance with the manufacturer's quality control procedures.

(5) Except as provided in paragraph (c)(6) of this section, at least once each calendar quarter, the inspector must examine the manufacturer's records required by § 160.076-33 and observe the manufacturer perform each of the tests required by § 160.076-31(c).

(6) If less than six lots are produced during a calendar year, only one lot inspection and one records' examination and test performance observation are required during that year. Each lot tested and inspected under paragraph (c)(3) of this section must be within seven lots of the previous lot inspected.

(d) *PFD lots.* A lot number must be assigned in accordance with UL 1180 to each group of PFDs produced. Lots must be numbered serially. A new lot must be started whenever any change in materials or a revision to a production method is made, and whenever any substantial discontinuity in the production process occurs. Changes in lots of component materials must be treated as changes in materials. The lot number assigned, along with the approval number, must enable the PFD